

Original Research Article

Psychological health problems and associated factors among perimenopausal women in rural Prayagraj

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Received: 15 June 2023

Accepted: 23 August 2023

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ABSTRACT

Background: The perimenopause is an ill-defined time period that surrounds the final years of a woman's reproductive life. It begins with the first onset of menstrual irregularity and ends after one year of amenorrhea has occurred. Various psychological illnesses also mark this period.

Methods: A cross-sectional study was conducted among 320 perimenopausal women aged between 40 to 55 years in rural Prayagraj. The study participants were interviewed and examined for psychological illnesses. A structured and predesigned questionnaire was used for the same. In this study, the scales used were PHQ-9, ISI, and GAD-7 for assessing depression, insomnia and anxiety respectively.

Results: Study found average age of perimenopausal women to be 46.55 ± 2.64 years. Among the psychological problems depression, insomnia and anxiety was analysed using scales- PHQ-9, ISI and GAD-7 respectively. It was found that 84.69% perimenopausal women had depression, 82.50% women had anxiety and only 35.31% women had insomnia. Of all women with depression majority had mild depression (70.94%). Regarding anxiety status majority had mild anxiety (68.13%). whereas 30.94% of women were found to have sub threshold insomnia.

Conclusions: Present study shows association between psychological symptoms and employment status. Depression was found to be associated with type of family and age of woman. Insomnia was found to be associated with marital status and age of woman. Anxiety was found to be associated with type of family. Most common psychological morbidity among perimenopausal women was found to be depression.

Keywords: Perimenopausal women, Psychological illness, Depression, Insomnia, Anxiety

INTRODUCTION

Menopause is an inevitable reproductive phase during midlife when various physical and mental changes may impair the quality of life of women. Middle aged women may experience a wide range of physical and psychological symptom.¹ Decrease in the production of estrogen leads to the premenopausal symptoms of hot flushes, insomnia and mood changes, as well as post-menopausal osteoporosis and vaginal atrophy, leading to decrease in quality of life.^{2,3}

The perimenopause is an ill-defined time period that surrounds the final years of a woman's reproductive life. It

begins with the first onset of menstrual irregularity and ends after 1 year of amenorrhea has occurred.⁴

The menopausal transition is characterized by menstrual cycle variability and fluctuations in reproductive hormone levels.⁵ The individual response to menopause varies considerably due to genetic, cultural, lifestyle, socioeconomic, education, behavioural and dietary factors.

World health organization defined menopause as "permanent cessation of menstruation resulting from loss of ovarian follicular activity" and postmenopause as the 12 months after natural amenorrhea.^{6,7} Perimenopausal period defines the time before; during and after menopause.

Symptoms in this phase last from four to five years. The severity of symptoms varies person to person. If menopause occur before the age of 45 years, it is known to be "early menopause" and when ovarian failure/surgical removal of the ovaries occurs before the age of 40 years this condition is considered as "premature ovarian insufficiency".

The hypo estrogenic state heralded by the onset of menopause affects various organ systems of the body. These effects can be classified with respect to the time since menopause as, immediate (vasomotor symptoms, mood swings, insomnia, urinary symptoms, cognitive dysfunction and sexual dysfunction), intermediate (genital atrophy, skin changes, urodynamic effects and pelvic organ prolapsed) and long-term (cardiovascular defect, osteoporosis and dementia).⁸

Studying the symptomatology and perimenopause related health issues of women in the community level gives us an insight of the unmet needs of the local women and helps us to provide focused service. This knowledge can be utilized for creating awareness and improving the quality of life of perimenopausal women. Since most of the population in India is rural, similar studies from different regions of India can be used for comparison and this information may be utilized for providing optimal health care to the rural perimenopausal women. As only few studies were available exploring this topic, menopause is an inevitable reproductive phase during midlife when various physical and mental changes may impair the quality of life of women. Middle-aged women may experience a wide range of physical and psychological symptoms.

There has been constant neglect of this group of women as most of the existing programmes address women of child bearing age group. There is no separate programme or provision for perimenopausal group. Also there is lack of research data regarding this group of women. It is imperative that we know about the burden of various morbidities this group is facing in order to intervene and act accordingly. For which present study has been designed to outline and find the Psychological morbidity (anxiety, depression and insomnia) of perimenopausal group of women.

METHODS

The present study was conducted in rural area of Prayagraj district. In rural areas of Allahabad, female population were 2,140,559 (according to 2011 census). The study was done during the year 2021-2022. Ethical clearance from the institutional ethics committee was obtained before conducting the study.

Study design

Cross-sectional study design was adopted in the present study.

Study population

All women (age 40 to 55 years) of rural area of Prayagraj district were a part of the study population.

Study unit

Individual perimenopausal women of age 40–55 years were a part of the study unit.

Inclusion criteria

Women between 40 to 55 years, those who fulfilled the definition of perimenopausal women, and those who were willing to cooperate and respond to questions were included.⁴

Exclusion criteria

Patients who were found to be suffering from any serious illness, hysterectomy was done because of any reason, and irregular menstrual cycle due to any medical problem were excluded.

Sample size calculation

Considering the prevalence of vasomotor symptoms among perimenopausal women to be 24.9% that is night sweats⁹ taking margin of error to be 5% at 95% confidence interval. The sample size was calculated to be 288 using the formula, where $P=24.9\%$, $L=5\%$ margin of error, and $Z^2=3.84$.

$$n = z^2 \times P \times Q / L$$

Sampling technique

Multistage random sampling was done in the present study.

In the first stage all the rural blocks of Prayagraj district were listed and from among these blocks four blocks were randomly selected.

In second stage, all the villages in the selected blocks were listed and from the selected blocks two villages were selected randomly from each block.

Then from the selected villages, starting from a random house women aged 40-55 years were interviewed then moving in a particular direction all the house of the villages was covered (i.e. women aged 40-55 years were interviewed) till desired sample size were achieved i.e. 40 from each village. Thus, enumerating a total of 320 participants.

Methodology

After obtaining clearance from Institute's ethical committee. Selected villages were visited and women aged

40-55 years were approached. First women in each village were selected randomly. House to house visit was done and women enumerated and interviewed until the desired number of sample was achieved. The participants were briefed about the study and its purpose of doing. After informed consent and assuring full confidentiality to the study participants, interviews were carried out using pre-structured coded schedules. Apart from other symptoms, psychological problems among Perimenopausal women were assessed by using 3 scales- patient health questionnaire-9, insomnia severity index, generalized anxiety disorder-7 (PHQ- 9, ISI, GAD-7) to screen depression, insomnia and anxiety respectively. Each woman was counselled and advised to take medical consultation on the basis of severity of symptoms.

Statistical analysis

The data was analysed using IBM statistical package for the social sciences (SPSS) version 20.0. The prevalence of various psychological illnesses was presented in percentages. For finding association between various factors and psychological illness, Chi square test was used.

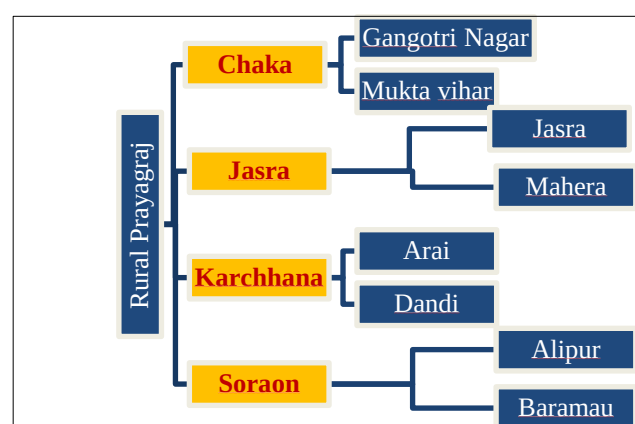


Figure 1: Regional areas of rural Prayagraj.

RESULTS

The study population comprised of 320 perimenopausal women with mean age of 46.55 ± 2.64 years. Majority of them were in age range of 45-50 years. Majority of them were Hindu and in SC/ST category. Almost half of them were belonged to joint family and more than half were illiterate. 62.9% study participants were unemployed; however, in employed participants mainly there were labourers. Based on modified B. G. Prashad classification, around 77% participants were belongs to middle class.

Table 2 shows different psychological illnesses among perimenopausal women. It is shown that depression is major illness (84.69%) followed by anxiety (82.50%) while insomnia was not found major psychological problem (35.31%).

In depression mild, moderate, moderately severe and severe type of depression was seen among study participants. Majority of women had mild depression (70.94%) followed by moderate depression (10.63%). While 2.50% of women had moderately severe depression and severe depression was found only in 0.63% of women. Similarly, majority of participants had mild anxiety (68.13%) followed by moderate anxiety (13.75%) and severe anxiety was least prevalent (0.63%). On the other hand, women without insomnia were 64.68% and rest participants had mainly sub threshold insomnia and only 4.38% of women were with clinical insomnia.

Table 1: Sociodemographic profile of study participants.

Perimenopausal women category	No. of participants (n=320)	Percentage
Age (years)		
40-45	68	21.25
45-50	195	60.94
50-55	57	17.81
Religion		
Hindu	288	90.00
Muslim	32	10.00
Category		
General	29	9.06
OBC	127	39.69
SC/ST	164	51.25
Type of family		
Nuclear	173	54.06
Joint	147	45.94
Literacy status		
Illiterate	204	63.75
Primary	50	15.63
Junior high school	19	5.94
High school	19	5.94
Inter	12	3.75
Graduation	7	2.19
Post-graduation	9	2.81
Employment status		
Regular	6	1.88
Contractual	21	6.56
Out sourcing	94	29.38
Unemployed	199	62.19
Socioeconomic status		
Upper	5	1.56
Upper middle	41	12.81
Middle	73	22.81
Lower middle	135	42.19
Lower	66	20.63

Association of different variables with psychological illness have been present in Table 3. It was found that, the marital status, age, employment status, tobacco chewing status, type of family, body mass index (BMI), and

socioeconomic status, all have been associated with different psychological illnesses ($p < 0.05$).

Table 2: Status of psychological illness among study participants.

Psychological illness	No of participants (n=320)	Percentage
Depression		
Mild	227	70.94
Moderate	34	10.63
Moderately severe	8	2.50
Severe	2	0.63
Total	271	84.69
Insomnia		
Sub threshold insomnia	99	30.94
Clinical insomnia (moderate severity)	14	4.38
Total	113	35.31
Anxiety		
Mild	218	68.13
Moderate	44	13.75
Severe	2	0.63
Total	264	82.50

Insomnia was found to be associated with marital status and this was statistically significant ($p=0.030$). Age found associated with depression as well as insomnia and these were statistically significant ($p=0.0417$ and $p=0.0018$ respectively). An association of anxiety with employment status was seen and it was statistically significant (as $p=0.002$) (Table 3).

Depression also found to be significantly associated with tobacco chewing status ($p=0.032$). Anxiety found associated with type of family and this was statistically significant ($p=0.047$). While there was no association was seen between literacy status and psychological problems (Table 3).

An association was seen between BMI and psychological illnesses (depression, insomnia and anxiety) and all were statistically significant ($p=0.001$, $p=0.005$ and $p=0.016$ respectively) (Table 3).

Based on binary logistic regression analysis, an association between BMI and depression, type of family and anxiety, and age with insomnia was found statistically significant (Table 4). On other hand, it is also observed that, unit increases in BMI causes 3 times increases in depression and unit increase in age because 2.89 times increase in insomnia.

Table 3: Psychological illness and its associated factors.

Variables	No of participants	Psychological illness		
		Depression (%)	Insomnia (%)	Anxiety (%)
Marital status				
Living with spouse	272	227 (83.45)	87 (31.98)	223 (81.98)
Not living with spouse (unmarried, divorced, widow, separated)	48	44 (91.66)	26 (54.17)	41 (85.42)
P value		0.145	0.030	0.564
Age (in years)				
40-45	68	51 (75)	17 (25)	55 (80.88)
45-50	195	171 (87.69)	65 (33.33)	163 (83.58)
50-55	57	49 (85.96)	31 (54.38)	46 (80.70)
P value		0.0417	0.00185	0.8141
Employment status				
Employed	121	102 (84.29)	47 (38.84)	110 (90.90)
Unemployed	199	169 (84.92)	66 (33.16)	154 (77.38)
P value		0.8799	0.3028	0.0020
Tobacco chewing status				
Tobacco user	156	139 (89.10)	57 (36.54)	124 (79.48)
No tobacco user	164	132 (80.48)	56 (34.15)	140 (85.36)
P value		0.0324	0.6544	0.1665
Type of family				
Joint family	147	123 (83.67)	49 (33.33)	128 (87.07)
Nuclear family	173	148 (85.55)	64 (36.99)	136 (78.61)
P value		0.6424	0.4947	0.04710
Literacy status				
Illiterate	204	173 (84.80)	69 (33.82)	169 (82.84)
Literate	116	98 (84.48)	44 (37.93)	95 (81.89)
P value		0.9388	0.4598	0.8303

Continued.

Variables	No of participants	Psychological illness		
		Depression (%)	Insomnia (%)	Anxiety (%)
BMI (kg/m²)				
≤24.99	226	182 (80.53)	69 (30.53)	179 (79.20)
>24.99	94	89 (94.68)	44 (46.80)	85 (90.42)
P value		0.0013	0.0055	0.0161
Socioeconomic status				
Upper and middle class	243	208 (85.59)	96 (39.50)	198 (81.48)
Lower class	77	63 (81.81)	17 (22.07)	66 (85.71)
P value		0.4235	0.0052	0.3943
Dietary pattern				
Vegetarian	108	88 (81.48)	43 (39.81)	86 (79.63)
Non vegetarian	172	146 (84.88)	53 (30.81)	143 (83.14)
Ovo-vegetarian	40	37 (92.5)	17 (42.5)	35 (87.5)
P value		0.9163	0.0695	0.0745

Table 4: Analysis of psychological illness by binary logistic regression.

Variables	B	S.E	Wald	df	Significance	Exp (B)
BMI						
Depression	1.133	0.508	4.969	1	0.026	3.106
Insomnia	0.474	0.260	3.307	1	0.069	1.606
Anxiety	0.568	0.404	1.972	1	0.160	1.764
Type of family						
Depression	0.321	0.342	0.879	1	0.349	1.378
Insomnia	0.198	0.246	0.645	1	0.422	1.219
Anxiety	-0.747	0.329	5.166	1	0.023	0.474
Age						
Depression	-0.183	0.465	0.155	1	0.693	0.832
Insomnia	1.062	0.318	11.142	1	0.001	2.893
Anxiety	-0.358	0.406	0.777	1	0.378	0.699

DISCUSSION

Ageing is an unavoidable process besides it is related to several changes that reduce the quality of life. Menopause is one of the natural processes of women's life. It is actually estrogen deficit state and affects many organs of the body those are sensitive for estrogen, thus declining level of estrogen causes numerous psychological changes of women's life. Severity of symptoms is more in perimenopausal phase complaints frequency prevalent in the perimenopausal phase and declines over a period.

The time span of different menopausal transitions is clashes with the time when a woman is already bearing the highest degree of family responsibilities in her life. Therefore, this raises a call for measuring and improving psychological health-related problems of women during transition stages. The mean age of menopause in Indian women was found to be much less than their Western counterpart which was around 51 years.¹⁰ These diversities in menopausal age probably may be because of genetic, environment factors and ethnic differences.

A decrease in estrogen level gives rise to a number of physical, psychological and sexual changes. The frequency

of symptoms varies over time. Some happen frequently in the perimenopause and decrease over time, while others increase progressively from perimenopause to postmenopause and become more severe towards the end of life.¹¹

Study found average age of perimenopausal women to be 46.55±2.64 years. This was earlier than the western part of the world so the menopausal health in Indian scenario is the matter of concern.

Similar finding was seen in the study of Ahuja, age of menopause in Indian women was 46.2 years.¹² Soni et al found the mean age of menopause was 46 years.¹³ On the other hand, Khatoon et al, age of menopause 50.33±5.26 years.¹⁴ Rahman et al found that mean age of menopause was 51.14 years among Chinese and Japanese women.¹⁵ According to authors view altitude, climate, environment, ethnicity, Nutritional status and genetic factors may be responsible for this variation.

In this study, 54.06% women are from nuclear family and 45.94% from joint family. Similar finding shown in study of Vijaylaxmi et al where nuclear family 40% and joint

family 50%. This show joint family culture still higher in rural areas.¹⁶

In present study, 63.75% women are illiterate and 36.25% women are literate. Similarly study of Vangara et al, 65.5% women were illiterate and 34.5% literate.¹⁷ As literacy still less in rural areas in developing countries.

In present study, 62.9% women were unemployed and 37.81% were employed and mainly labourers. Contrary to above study in study of Dewangan et al, 73.40% of women were labourers and 24.50% women were house wife.¹⁸ Reason might be the area from where the study participants were taken. One more reason is that in developing countries like India mainly male wear financial work load and employed while females are generally home makers.

In present study, majority participants belong to middle class i.e. 77.81%. Similarly, in the study of Agarwal et al, 77.3% women were from middle class.¹⁹ On the other hand in the study of Khatoon et al, 82% women were from lower class and 17.3% from middle class.¹⁴ This huge variation because of region selected for the study.

In present study, 53.75% women are non-vegetarian and 33.75% were vegetarian and 12.5% were ovo-vegetarian. That shows non vegetarian consuming participants are increasing. While in the study of Ahuja, 52.7% women were vegetarian, 45.4% were non vegetarian and 1.95% was ovo-vegetarian.¹²

In the present study, over all psychological problem was present in 93.75% of women i.e. they have at least one problem either depression or insomnia or anxiety.

This study showed depression among 84.69% of women and among them 70.94% of women had mild depression. Similar results were also seen in study of Soni et al, where depression was found in 76.63% of women, it was 87.3% in study of Gupta et al.^{13,20} This shows depression is major health issue in this group of women but as it is mild type there is need of emotional support and counseling in perimenopausal phase.

This study found that 35.31% of women suffered from insomnia. Similar result was seen in study of Patil et al, i.e. 32.29% women had sleep problems, study of Dar et al 28.57% women had sleep disturbance.^{21,22} While in study of Khatoon et al, 56% women were having sleep problems.¹⁴ In study of Gupta et al, sleep disturbance was 70%, in study of Agrwal et al, sleep problems were present in 76.3% women.^{19,20} Variation is seen because cause of insomnia is multifactorial, hormonal fluctuation is one of them.

This study found 82.50% of women were suffering from anxiety and among these women 68.13% women were with mild anxiety. Similarly, in study of Kalhan et al, anxiety was present among 80% women, in study of Agarwal et al it was 74.6%.^{19,23}

On the other hand, anxiety was present in 50% women in study of Gohari et al while in study of Nayak et al, 40.2% women were feeling anxious and nervous.^{9,24} Hormone changes, life stresses and sleep problem may all cause anxiety at this time. These changes vary person to person so variation in different studies seen.

Depression, insomnia and anxiety all were seen more in participants who were not living with spouse as compared to that among married women living with spouse. Insomnia was found to be associated with marital status ($p=0.030$). Reason behind it may be loneliness and lack of social respect, social support and criticism.

Complain of insomnia increase with age while depression and anxiety was seen more in 45-50 yeas age group (Figure 2). Age was found to be associated with depression and insomnia ($p=0.0417$, $p=0.0018$). Reason may be more fluctuation in estrogen hormone than symptoms are sever and severity decrease after wards when body make adjustment with change hormone level.

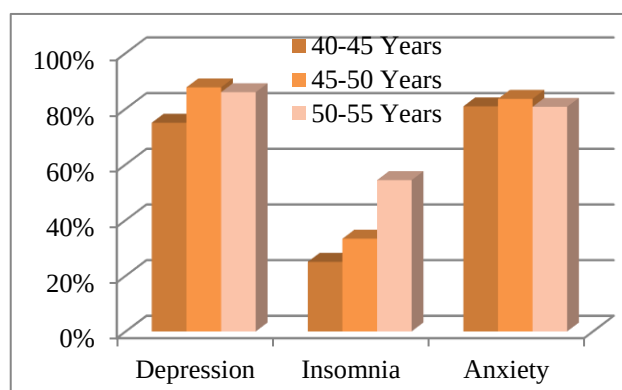


Figure 2: Relationship between age with psychological illness.

Insomnia and anxiety were present more in employed women and employment status was found to be associated with insomnia and anxiety. Depression and insomnia were found more in tobacco users while anxiety was seen more in non-tobacco users. Association of tobacco consumption with depression was significant ($p=0.0324$).

Depression and insomnia were higher in women living in nuclear family while anxiety was prevalent in women from joint family (Figure 4). Association of anxiety with type of family was statistically significant ($p=0.047$).

Depression, insomnia and anxiety all were seen to be more in over weight and obese women (Figure 3) and association was also significant ($p<0.05$).

Depression and insomnia were found slightly higher in upper class than other class while insomnia was seen higher in upper and middle class both. On the other hand, anxiety was slightly higher in lower class. Association

between insomnia and socioeconomic status was found statistically significant ($p=0.005$).

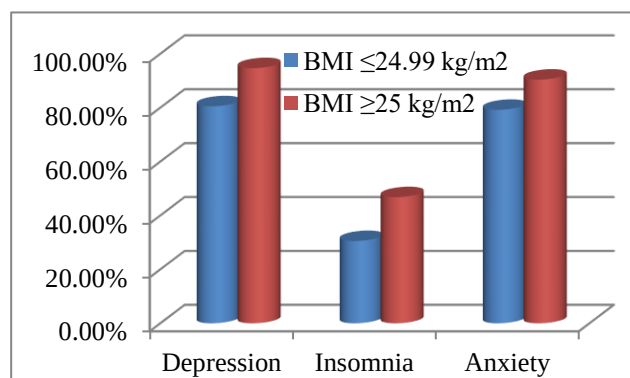


Figure 3: Relationship between BMI and psychological illness.

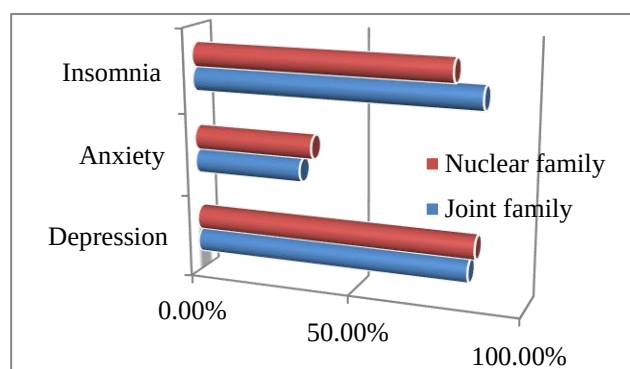


Figure 4: Association of type of family with psychological illness.

A model was formed applying binary logistic regression. It included BMI, type of family and age of woman found to be associated with different psychological morbidity ($p<0.05$) (Table 4).

By regression analysis it was found that unit increase in BMI causes 3 times increase in depression similarly unit increase in age cause almost 3 times increase in insomnia.

Limitations

Since it was a community based study we can strongly attribute the result to the general population of Prayagraj district. We had used three different validated tools to assess the psychological illness and we can compare the results with the other Indian and international studies at different settings. Psychological illnesses were evaluated by asking questions, self-reporting and simple field examination without any further confirmation by other specific laboratory investigations because of which morbidities might have been underestimate or missed. Only clinical criteria were used to identify study participants. No other investigations including hormone assay was done to identify perimenopausal women.

CONCLUSION

Most common perceived psychological illness in this study is depression followed by anxiety and then insomnia. Severity of problems is higher among the women not living with spouse, obese and tobacco chewer. Depression found to be associated with age, tobacco chewing status and BMI and this association is statistically significant. There is association of anxiety with employment status, type of family and BMI and found to be statistically significant. Insomnia also found to be significantly associated with marital status, age, BMI and socio-economic status. Thus in perimenopausal women psychological symptoms cannot be ignored. Awareness regarding perimenopausal psychological illnesses and its management should be enhanced by IEC activity in rural women to maintain their psychological health in this transition period. Life style modification and awareness programme will be beneficial among these women. In menopausal transition BCC, family and community support are essential to cope with various psychological health problems.

ACKNOWLEDGEMENTS

Authors would like to thank the department of community medicine, MLN Medical College, Prayagraj for support in completion this task. They are also thankful to study participants for giving their time and valuable informations, required to complete this study.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Siddiqui MB, Parveen K, Prakash G, Singh R. Psychological health problems and associated factors among perimenopausal women in rural Prayagraj. *Int J Community Med Public Health* 2023;10:3295-302.